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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,085	06/20/2003	Mukesh K. Jain	FA/254	7055

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EXAMINER

MATZEK, MATTHEW D

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,085

Applicant(s)

JAIN ET AL.

Examiner

Matthew D. Matzek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/3/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments, see Remarks, filed 7/29/2005, with respect to the rejection(s) of claim(s) 1-65 under 35 U.S.C. 103 have been fully considered and are persuasive. The combination of Maples (US 6,395,383) in view of Baker (US 4,943,475) and in further view of Ozcayir et al. (US 5,618,334) is improper as Maples teaches away from the use of polyimides and polyamides. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Maples (US 6,395,383) in view of Williams (US 4,239,678) and Maples (US 6,395,383) in view of Williams (US 4,239,678) in further view of Baurmeister (US 5,743,775). The amended claims provided in the Amendment dated 7/29/2005 contain no new matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The terms "high moisture vapor permeation" and "low permeation to noxious chemicals" in claims 1, 24, 41 and 53 are relative terms, which render the claim indefinite. The terms "high moisture vapor permeation" and "low permeation to noxious chemicals" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-44 and 46-65 are rejected under 35 U.S.C. 103(a) as obvious over Maples (US Patent 6,395,383) in view of Williams (US 4,239,678).

a. Maples discloses a selectively permeable protective covering capable of transmitting high quantities of water vapor while also being capable of significantly restricting the passage of dangerous chemicals (Abstract). This invention is directed to use as a protective garment or associated accessories (Abstract). In an embodiment of this invention the chemical protective covering comprises two water vapor permeable open pore polytetrafluoroethylene (PTFE) substrates and a polyamine polymer with amine-acid moieties specifically involving H_2SO_4 (col. 4, lines 57-65). The third open pore substrate may also be made of polyethylene, polysulfone, polypropylene, polyamides, and the like (col. 7, lines 37-45). The acidic species of the polyamine polymer amine-acid moieties are preferably multiprotic and may include sulfuric and sulfurous acid (col. 9, lines 5-20). The acidic species may also be covalently bound within the polyamine polymer (col. 9, lines 12-16). The polyamine polymer will be made to form a selectively permeable sheet or layer, which in some embodiments, may be part of a composite sheet with at least one water vapor permeable substrate (col. 10, lines 12-15). A laminate construction of the applied invention is depicted in Figure 19. The applied article has a water vapor transmission rate greater than $2000 \text{ g}/(\text{m}^2 \cdot \text{day})$ (col. 4, lines 40-44). Maples is silent as to the use of aromatic sulfonated polymers in the creation of the protective article.

- b. Williams teach a flame retardant thermoplastic composition comprising an organic sulfonated flame retardant additive in admixture with a composition selected from the group comprising a polyarylsulfone, polyphenylsulfide (PPS), blends thereof and polyethersulfone (PES) (Abstract and Example IV). The composition may also include drip-retarding agents, and can be processed via injection molding, foam molding, extrusion, blow molding and the like (col. 3, lines 10-17). The composition is for use in the creation of protective articles (col. 1, lines 31-43). This applied patent is silent as to the sulfonic acid equivalent weight, but it is reasonable to assume that the invention of Williams has a sulfonic acid equivalent weight of about 200-1000 or 400-800, or it would have been obvious to have selected the instantly claimed species in order to arrive at a material having the desired molecular weight for the sulfonic acid specie.
- c. Since Maples and Williams are from the same field of endeavor, (i.e. protective articles), the purpose disclosed by Williams would have been recognized in the pertinent art of Maples.
- d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the article of Maples with the flame retardant composition of Williams in order to create chemical protective article that is also flame retardant.
- e. Claims 2-4, 30-31 and 54-55 are rejected as the invention of the '383 patent may be used as blankets, tents, sleeping bags, sacks, footwear, gloves, garments and the like (col. 6, lines 29-32).

- f. Claims 5 and 27 are rejected as the '383 invention allows for the incorporation of additional layers to the protective covering article including various textiles, felts, films, membranes, scrims, leathers, and the like (col. 12, lines 4-10).
- g. Claims 6 and 29 are rejected as the fabric laminate may comprise layers of polyamides, cellulose, polyester, and polyurethane ('383 col.7, lines 37-62). Figure 19 of the '383 patent demonstrates the use of multiple layers of fabric (col. 12, lines 24-28).
- h. Claims 16 and 17 are rejected as the aromatic groups of the PPS polymer are sulfides.
- i. Claim 18 is rejected as both patents teach cross-linking of the polymers and cross-linking, creating insoluble polymer networks, can be achieved by any of various means known in the art. One route is to cross-link via the amine functionalities within the PPS polymer. As such, suitable cross-linking agents may be selected from, for example, polyepoxides, polybasic esters, aldehydes, and alkylhalides. In a preferred embodiment, the polyamines are cross-linked at least in part by epoxide linkages ('383 col. 10, lines 3-11).
- j. The '383 patent is silent as to the nature of the cross-linking of the sulfonated aromatic polymer, but does state that the cross-linking may be achieved by any of various means known in the art (col. 10, lines 3-6). The Examiner takes the position that ionically-crosslinking polymers is known in the art and as such the applied patent rejects instant claim 19.

- k. Claim 20 is rejected as the polyamine polymer layer may also contain cross-linking agents, acidic species and/or additional processing and performance aids (col. 10, lines 40-45).
- l. Claims 21 and 36 are rejected as the polyamine polymer will be made to form a selectively permeable sheet or layer, which in some embodiments, may be part of a composite sheet with at least one water vapor permeable substrate ('383 col. 10, lines 12-15).
- m. The '383 patent teaches the polyamine polymer composite sheet with open pore expanded PTFE substrates ('383 claim 10). Claim 22 is rejected.
- n. Claims 28 and 64 are rejected as laminate arrangements may consist of arrangements of polyimide layers combined with one or more additional fabric layers ('383 col. 12, lines 44-48).
- o. Claims 37-39 and 60-63 are rejected as the polyimide polymer may be made to imbibe into a substrate or substrates such that the polymer fills the voids within a substrate either wholly or partially ('383 col. 11, lines 55-63). The applied patent teaches the polyimide polymer composite sheet with open pore expanded PTFE substrates ('383 claim 10).
- p. It is envisioned that multiple substrates may be used ('383 col. 11, line 67-col. 3, line 3). Claims 40, 44 and 64 are rejected.
- q. Although Maples does not explicitly teach the claimed bis-2-chloroethyl sulfide or pinacolyl methylphosphono fluoridate permeability over a 20-hour period, it is reasonable to presume that said properties are inherent to Maples. Support for said

presumption is found in the use of like materials (i.e. chemical protective coverings made of aromatic sulfonated polymers). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties would obviously have been present one the Maples product is provided. Note *In re Best*, 195 USPQ at 433, footnote (CCPA 1977) as to the providing of this rejection made above under 35 USC 102.

r. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner*, et al. (CCPA) 186 USPQ 80.

4. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maples (US Patent 6,395,383) in view of Williams (US 4,239,678) as applied above to claim 41 and in further view of Baurmeister (US 5,743,775).

a. Baurmeister teaches a laminate that restrains organic vapors, aerosols, and biological agents, where at least one layer is implemented as a barrier layer, wherein the barrier layer is implemented from cellulose-based polymers over its entire surface and the laminate is water-vapor permeable (Abstract). The invention of Baurmeister may be used in clothing articles, military protective clothing, tents, and emergency shelters (Abstract). The patented invention can also include a carrier layer (col. 3, lines 10-15). The membrane can also be a microporous filtration membrane whose pores are at least in part filled with the cellulose-based polymers. Typical examples of microporous filtration membranes include polysulfones and poly(ethersulfones) (col. 3, lines 30-45). In one embodiment of the invention it is possible for the laminate to contain a separation layer, which is waterproof and water-vapor permeable (col. 5, lines 3-6). In a particular

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embodiment a layer of the laminate of the invention is a woven fabric layer (col. 6, lines 47-50).

b. Since Baurmeister and Maples are from the same field of endeavor (i.e. chemical protective articles), the purpose disclosed by Maples would have been recognized in the pertinent art of Maples.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the article of Maples to be waterproof and water-vapor permeable. The skilled artisan would have been motivated to make the invention of Maples waterproof due to the nature of the directed uses of the invention of Maples, which include blankets, tents, sleeping bags, sacks, footwear, gloves, garments and the like (col. 6, lines 29-32).

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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5. Claims 1-65 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-51 of copending Application No. 10/818,214. Although the conflicting claims are not identical, they are not patentably distinct from each other because both articles are directed to protective composites made of aromatic sulfonated polymers.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is (571) 272-2423. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdm



NORCATORRES
PRIMARY EXAMINER